

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
THERAPY DEPARTMENT FOR GROWTH AND DEVELOPMENT
DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Physical Therapy Department for Growth and Development Disorder in children and Its Surgery

Master Degree
2013

Author	:	Ahmed Eid Mohammed.
Title	:	Systematic Review: Effects of botulinum toxin type A on motor functions of lower limbs in children with cerebral palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Hoda Abd El Azim El Talawy.
	2.	Tarek Elsayed Ismael Omar.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>Objective: The aim of this review was to know the effectiveness of botulinum toxin type A on gross motor functions of lower limbs in children with cerebral palsy. Methods: Systematic review of randomized controlled trials. A search was made in Medline and Ovid. Intervention: botulinum toxin type A used for lower limbs in children diagnosed as cerebral palsy with age between birth to eighteen years. Outcome measures: motor functions measures by GMFM score. Sub-measures included spasticity by modified Ashworth scale, passive range of movement. Results: Nine studies selected from seventeen articles. All studies were included in a Meta analysis. When botulinum injection was compared with control, it was found to be effective at improving gross motor function measure for 3 months: 1.83(0.85 to 3.92) and for 6 months: 1.49(0.55 to 4.02). Also effective at reducing spasticity in lower limbs for 3 months. Conclusions: There is evidence that botulinum toxin A improve gross motor functions of lower limbs in children with cerebral palsy.</p>
Key words	1.	Systematic review.
	2.	Cerebral palsy.
	3.	botulinum toxin A.
	4.	gross motor functions.
	5.	lower limbs and spasticity.
	6.	Children.
Arabic Title Page	:	إجراء فحص منهجي عن تأثير حقن البتيلونيم في حالات الشلل الدماغي علي الوظائف الحركي .
Library register number	:	3409-3410.

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Author	:	Ahmed Mohamed Saad Awad.
Title	:	Carrying Angle In Relation To Muscle strength In children With Erb's Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amera Mohamed El Tohamy.
	2.	Hatem Mohamed El Azizi.
	3.	Aliaa Mohamed Rehan.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The purpose of this study was to determine the relationship between the carrying angle and the muscle strength in children with Erb's palsy and also to assess the effect of reduced muscle strength on the muscle architecture and carrying angle in these children. Subjects and procedures: Twenty three Erb's palsied children (boys and girls) with age ranged from 6 months to 6 years old were selected to participate in this study. Carrying angle was measured by a universal goniometer, muscle architecture parameters (pennation angle and muscle thickness) were measured by ultrasonography and muscle strength was measured by active movement scale for young children and by Laffayette dynamometer for older children. Results: The results of this study revealed that there was a positive significant correlation between carrying angle and pennation angle of biceps during relaxation in affected side of group (2) and a positive correlation between carrying angle and muscle thickness of biceps and triceps during contraction in non affected side of group (1). Also in comparison between both sides there was a significant increase in carrying angle in the non affected side. Also a significant increase in pennation angle of triceps during relaxation in the non affected side. In conclusion: From the obtained results, it can be concluded that there is a relation between carrying angle, muscle architecture parameters and muscle strength.</p>
Key words	1.	Carrying angle.
	2.	muscle strength.
	3.	Architecture.
	4.	erb's palsy.
	5.	Children.
Arabic Title Page	:	العلاقة بين زاوية العضد الساعديه وقوة العضلة عند الأطفال المصابين بالشلل الإرابي.
Library register number	:	3355-3356.

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Author	:	Ahmed Mohamed Shokr Hassan.
Title	:	Sitting Control in Response to Electrical Stimulation in Spastic Diplegic Cerebral Palsied Children.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Gehan Hassan Elmenyawy.
	2.	Hesham Anwar Amer.
	3.	Nahed Shukri Thabet.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The purpose of this study was to evaluate the sitting control in children with spastic diplegic cerebral palsy following participation in physical therapy program which included selected exercises program and electrical stimulation in form of high voltage pulsed galvanic current stimulation for back and hip extensors muscles; three times per week for three successive months. Thirty spastic diplegic children of both sexes (15 boys and 15 girls), their age ranged from fourteen to twenty four months old, were selected from the out patient clinic of Zagazig University hospital. They were classified randomly into two groups of equal number A (Control) and B (Study). Sitting control was assessed by using, kyphotic angle, lumbosacral angle and Peabody Developmental Motor Scale (version two) before and after the application of the treatment programs. The results of this study revealed statically significant improvement in all the measuring variables in the control and study groups when comparing their pre and post treatment mean values. However, more improvement was noticed in the study group when comparing the post-treatment mean values of the study group and control groups. It could be concluded that, the program of electrical stimulation may be used in addition to the traditional physical therapy programs to improve sitting control in children with spastic diplegic cerebral palsy.</p>
Key words	1.	Cerebral palsy.
	2.	Diplegia.
	3.	Sitting control.
	4.	Electrical Stimulation.
Arabic Title Page	:	التحكم في الجلوس نتيجة للتنبيه الكهربائي لدى الأطفال المصابين بالشلل الدماغى التقلصى المزدوج.
Library register number	:	3417-3418.

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Author	:	Ahmed Salim Mohamed.
Title	:	Effect of Universal Exercise Unit on standing in spastic diplegia.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Hebatallah Mohamed Kamal.
	2.	Asmaa Osama Elsied.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>Purpose: To evaluate the effect of using Universal Exercise Unit in strengthening program for both lower limbs and its effect on standing in spastic diplegia. Subjects: Forty spastic diplegic children of both sexes (20 boys and 20 girls), their ages ranged from 3 to 6 years old , chosen from outpatient clinic, Faculty of Physical Therapy, Cairo University. They were randomly classified into two groups of equal number (Control and Study). Procedures: The control group received a designed physical therapy program while study group received Universal Exercise Unit strengthening program , Average peak force and total work were assessed by using Biodex Isokinetic Dynamometer and standing abilities were assessed using Peabody Developmental Motor Scale before and after the application of the treatment program in the two groups control and study. Results: The results revealed statistically significant improvement in the post treatment values for the study and control group in all measured variables. Conclusion: Universal Exercise Unit may be considered as an effective method for improving lower limb strength and standing function.</p>
Key words	1.	Cerebral palsy, Diplegia.
	2.	Average Peak Force.
	3.	Total Work.
	4.	Standing.
	5.	Universal Exercise Unit.
	6.	Children.
Arabic Title Page	:	تأثير وحدة العلاج الموحدة على الوقوف في حالات الشلل النصفي التقلصي السفلي .
Library register number	:	3253-3254.

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Author	:	Alaa Fahmy Hassan Al-Nemr.
Title	:	Systematic Review: Bimanual Training For Children With Hemiplegic Cerebral Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Hassan Abd El-Azim.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Objective: The aim of this systematic review was to study the effectiveness of bimanual training on spontaneous use of both hands in hemiplegic cerebral palsy children. Methods: Search made in pub med, Pedro, Cochrane and goggle scholar web site up to June 2013. Systematic review of randomized controlled trials, the intervention used was Bimanual training in the form of bimanual intensive training and bimanual occupational therapy. Outcomes were Classified into primary outcomes; bimanual performance and secondary outcomes which were included in selected studies. Results: Seven studies were selected, four studies included in meta-analysis; three studies included in meta-analysis for the primary outcome measured immediately after intervention, and two studies for the primary outcome measured at one and six months after intervention and for one of the secondary outcomes; quality of upper limb movement measured immediately after intervention. The other outcomes were subjected to descriptive analysis. Bimanual training had a significant effect on bimanual performance in hemiplegic cerebral palsy children with maintenance of this effect for a long period of time but, no superiority comes from using it when compared with constraint induced movement therapy and modified constraint induced movement therapy on both bimanual performance and quality of upper limb movement. Conclusion: The current level of evidence supports the effectiveness of bimanual training to improve bimanual performance in hemiplegic cerebral palsy children however, no superiority comes from using it when compared with constraint induced movement therapy and modified constraint induced movement therapy, while in quality of upper limb movement; it remains weak.</p>		
Key words	1.	Systematic Review.
	2.	Cerebral Palsy.
	3.	Hemiplegia.
	4.	Bimanual Training and Bimanual Performance.
	5.	Children.
Arabic Title Page	:	فحص منهجي: التدريب باليدين للأطفال المصابين بالشلل الدماغي المفلوج .
Library register number	:	3383-3384.

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Author	:	Amr Ayed Osman Aly Emam.
Title	:	Efficacy of Hyperbaric oxygen therapy in children with autism spectrum disorder.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Elham El Sayed Salem.
	2.	Kamila Saad Abd El Hamid.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of this study was to study the effect of hyperbaric oxygen therapy on fine motor skills and social behavior in children with autism spectrum disorder. Subjects and procedures: Thirty autism spectrum disorder children with both sexes were selected to participate in this study, their ages ranged between 5 to 7 years old. They were divided into 2 groups of equal numbers, control group (group A) who assigned to hand function rehabilitation program only, while study group (group B) received the same hand function rehabilitation program in addition to hyperbaric oxygen therapy. Evaluation was carried out for each child individually before, after 3 successive months of application of different treatment programs; it included assessment of fine motor skills using Peabody Developmental Motor scale and Social behavior by using Vineland Social Maturity Scale. Results: The results of both groups revealed non significant difference between the two groups before treatment, while after successive 3 months, there is a significant improvement in both groups. There was a significant difference between the two groups in favor of study group B. Conclusion: From the obtained results of this study, hyperbaric oxygen therapy is considered an effective tool in treating children with autism spectrum disorder.</p>		
Key words	1.	Autism spectrum disorder
	2.	hyperbaric oxygen therapy
	3.	social behavior- PDMS-2
	4.	Children.
Arabic Title Page	:	فعالية العلاج بالأكسجين تحت الضغط للأطفال المصابين بالتوحد.
Library register number	:	3577-3578.

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Author	:	Aymen Moghazy EL Said Moghazy shayek.
Title	:	Effect of Shock wave stimulation on hypertonic plantar flexors muscles in hemiplegic children.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Emam Hassan EL Negmey.
	2.	Amina Hindawi Salem.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of this study was to examine the effect of a single shock wave stimulation session on reducing hypertonic plantar flexor muscles of spastic equinus foot in hemiplegic cerebral palsy children. Subjects : Forty male and female patients diagnosed as hemiplegic cerebral palsy children with equinus foot deformity due to spasticity of calf muscles ranged in age from 3 to 7 years and their spasticity ranged from grade 1+ to grade 2 according to Modified Ashworth Scale . Methods: Patients were distributed into two groups of equal number . The first group shock wave group (A) consisted of 20 patients received single active shock wave stimulation on gastrocnemius and soleus muscles with energy flux density of 0.1 mj/mm². The second group a placebo – controlled group (B) consisted of 20 patients recieved shock wave session without using shock wave energy . Patients of both groups were evaluated pre and post treatment for Passive Range of Motion (PROM), Modified Ashworth Scale (MAS), H / M ratio using electromyography and patients of shock wave group (A) only were evaluated once more using the same methods of evaluation after 4 weeks of treatment to detect long-lasting effect of single active shock wave session. Results: Patients of shock wave group (A) showed significant improvement in all measured variables after treatment and has long – lasting effect after 4 weeks. While patients of a placebo – controlled group (B) showed no significant improvement in all measured variables after treatment. Conclusion : From the findings of the current study it can be concluded that shock wave stimulation can be added as an effective and safe intervention to reduce the spasticity of plantar flexor muscles in spastic hemiplegic cerebral palsy children.</p>		
Key words	1.	hypetonic plantar flexor.
	2.	shock wave.
	3.	Placebo.
	4.	controlled study.
	5.	Passive Range of Motion (PROM).
	6.	Modified Ashworth Scale (MAS).
	7.	H / M ratio.
	8.	children.
Arabic Title Page	:	تأثير التنبيه بالموجات التصادمية على التقلص المرضي لعضلات الثني الإخمصي لدى اطفال الفالج الشقي .
Library register number	:	3441-3442

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Author	:	Azza Ahmed Hassan.
Title	:	Comparative study between modified ashworth scale and tardieu scale in measuring spasticity in children with spastic diaplegia.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Khaled Ahmed Olama.
	2.	Sahar Mohamed Nour El-Din.
	3.	Samah Attia Tolba Elshemy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The modified Ashworth Scale and Tardieu Scale are considered the primary clinical measures of muscle spasticity in children with cerebral palsy. The purpose of this study was to investigate the difference between the modified Ashworth Scale (MAS) and Tardieu Scale (TS) as regards the content validity. Fifty patients with spastic diaplegic cerebral palsy (age ranged from 5to8 years) were assessed by three different methods: modified Ashworth Scale, Tardieu Scale, and H/M ratio at the same time of the day in relaxed position and environmental factors. The results revealed statistically significant difference between the content validity of both variables: MAS and TS. Comparing MAS and H/M ratio there was poor correlation while there was a moderate correlation when TS was compared with H/M ratio. There was negative correlation between angle of catch(y) and H/M ratio. From the obtained results, it can be concluded that Tardieu Scale was more sensitive than Modified Ashworth scale in assessing spasticity in children with spastic diaplegia.</p>		
Key words	1.	Diaplegia.
	2.	Spasticity.
	3.	modified Ashworth Scale.
	4.	Tardieu Scale.
	5.	H/M ratio.
	6.	Children.
Arabic Title Page	:	دراسة مقارنة بين مقياس أشور المعدل ومقياس الترديو في قياس التشنج عند الأطفال ذوي الشلل التقلصي المزدوج .
Library register number	:	3283-3284.

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Author	:	Bousy Hanafy Mhmoud Ahmed.
Title	:	Effect of aerobic Training on anemic level in children with renal failure receiving hemodialysis.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Manal Salsh El-Din Abdel-Wahab.
	2.	Fatima Ibrahim Fadel.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of the study was to examine the effect of Aerobic training on anemic level in children with renal failure receiving hemodialysis. Thirty children with mild anemic level End Stage Renal Disease receiving hemodialysis ranged in age from 10 to 15years were assigned randomly into two groups of equal number representing control and study groups. Weight, CBC, serum electrolytes(ca, k, P,Na), kidney functions(urea, creatinine) and six-minute walking test were detected for each child before and after 3months of starting treatment. Control group was treated by classic medical treatment and hemodialysis 3times per week. Study group(n=15) was treated by same medical treatment and hemodialysis sessions 3times per week in addition to the selected physical therapy program in form of aerobic training(Treadmill walking). Results: The collected data was processed and statistically analyzed using paired and unpaired t-test. The results showed statistically significant improvement in post treatment hemoglobin level, functional performance, calcium level of the study group,while Insignificant statistical change concerning weight, kidney functions, potassium, sodium, phosphorus was recorded when comparing post treatment results in both control and study group. Conclusion: It is possible to conclude that aerobic training can be considered an effective modality in improving hemoglobin level, functional performance, calcium level in children with mild anemic level in end stage renal disease receiving hemodialysis.</p>		
Key words	1.	End Stage Renal Disease.
	2.	Hemoglobin level, Renal failure.
	3.	Hemodialysis.
	4.	Six Minute Walking Test.
	5.	Aerobic training.
	6.	Children.
Arabic Title Page	:	تأثير التدريب الهوائي على مستوى الأنيما في الأطفال الذين يعانون من الفشل الكلوي ويخضعون إلى الغسيل الدموي.
Library register number	:	3245-3246.

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Author	:	Eman Mohammad Kamar El- Dawlah El-Sayed.
Title	:	Effect of Cognitive Rehabilitation On Hand Function In Children With Down's syndrome.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Manal Salah El Dein.
	2.	Ihab Ragaa Abdel Raouf National.
	3.	Shorouk Ahmed Wagdy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of the study was to investigate the effect of cognitive rehabilitation on hand function in children with Down syndrome. Twenty six children with Down syndrome with age ranged from 7 to 10 years participated in this study. They were evaluated using Reha-Com system and Peabody Developmental Motor Scale before and after treatment programs. Subjects were classified into two groups of equal numbers. Group A; received hand function training program, whereas group B, received the same program for group A, in addition to attention and concentration training using Reha-Com system. Concerned all variables used for evaluation, the results of this study revealed non significant difference between the two groups before treatment. While after the suggested treatment program, significant difference was revealed between the two groups in favor of the study group B. According to the results of this study it can be concluded that, cognitive rehabilitation has a positive effect on hand function in children with Down syndrome.</p>		
Key words	1.	Cognition.
	2.	Hand function.
	3.	Down syndrome.
	4.	Children.
Arabic Title Page	:	تأثير التدريب المعرفي على وظائف اليد في الأطفال المصابين بمتلازمة داون .
Library register number	:	3123-3124.

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Author	:	Esraa Mohhamed Abdel Wadod Fayed.
Title	:	Ventilatory function assessment for primary school passive smoking egyptian children.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Elham El-sayed Salem.
	2.	Heba Allah Ahmed Mousa.
	3.	
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The purpose of this study was to investigate the ventilatory function assessment for primary school passive smoking Egyptian children. Subjects: two hundred passive smoker children (90 males and 110 females) with age ranged from 6-12 years .Methods: All parent,s children were asked by questionnaire to collect data for each child and to determine the smoking index. Measuring the child weight and height of each child in the study. All children were evaluated for ventilatory functions by using spirometry. Measures: forced vital capacity (FVC), forced expiratory volume in one second (FEV1), forced expiratory volume in one second and Forced Vital capacity ratio (FEV1/FVC%), Forced Expiratory Flow at 25-75% of Forced Vital Capacity (FEF25-75%) and Peak Expiratory Flow Rate (PEFR). Results: all age groups (6-7 years, 7-8years, 8-9years, 9-10years, 10-11years, 11-12years) and pack years groups for males and females as regards(FVC %),(FEV1%),(FEF25-75%),PEFR the actual mean values of passive smoker were lower than normal predicted mean values according to their age, weight and height parameters. There were statistically significant difference in (FVC %, FEV1%, FEF25-75%, PEFR) where $p < 0.05$. There were not statistically significant difference in (FEV1 %/ FVC %) where $p > 0.05$.Coclusion: Pulmonary function values of both males and females were affected by passive smoking. The small airways were more affected than large airways.</p>
Key words	1.	Ventilatory Function Tests.
	2.	Passive smoking.
Arabic Title Page	:	تقييم التهوية الرئوية للأطفال المصريين بالمدارس الابتدائية المدخنين سلبياً .
Library register number	:	3421-3422.

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Author	:	Khlood Mohamed Salama Mohamed.
Title	:	Assessment Of Postural Stability In Children With Pronated Feet.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira Mohamed El-Tohamy.
	2.	Amira Mohamed El-Tohamy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Background: Balance is required for normal daily living such as walking, running and stair climbing the loss of balance response and increased incidence of falls is of concern to physical therapist so we should consider the mechanics of the feet and how does that affect postural stability. Purpose: The purpose of this study was to evaluate postural stability in children with pronated feet and compare results with those of children with normal feet to identify the differences between them and to investigate the interrelationship between body weight and navicular drop. Methods: Twenty children with pronated feet (study group) and twenty children with normal feet (control group) were participated in this study. All children ranged in age from six to eleven. Navicular Drop Test was used to determine pronated feet and Biodex Balance System was used to assess postural stability in both groups. Findings: MANOVA revealed no significant difference in overall stability index and mediolateral stability index with significant difference in anteroposterioer stability index at stability level (8). While, at stability level (4) the all independent variables have significant difference. The bivariate correlation showed insignificant correlation between body weight and navicular drop. Interpretation: based on the previous findings, it may be concluded that there is balance affection in children with pronated feet that appear at difficult stability situation as stability level (4).</p>		
Key words	1.	Pronated foot.
	2.	Postural stability.
	3.	Normal children.
	4.	Children.
Arabic Title Page	:	تقييم استقرار وضع الجسم في الأطفال من ذوي الأقدام المنكبة.
Library register number	:	3183-3184.

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Author	:	Maha soliman mahmoud soliman.
Title	:	Effect Of Respiratory Therapy In Children With Muscular Dystrophy: Systematic Review
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Eman Ibrahim Elhadidy.
	2.	Eman Fawzy Halawa.
Degree	:	Master.
Year	:	2013.
Abstract	:	Objective: the aim of this systematic review was to study the effectiveness of respiratory therapy on pulmonary functions, respiratory muscles strength and respiratory muscles endurance in children with muscular dystrophy. Data source: search were made in pub med , Ovid, Pedro , Cochrane and Google scholar web site. Selection criteria: randomized controlled trials done for children with muscular dystrophy whose ages ranged from birth to18 years old. Seven studies were included from 1986 to 2005. They received respiratory therapy, in the form of respiratory muscle training, inspiratory muscle training, incentive spirometer and intrapulmonary percussive ventilation. Data- extraction: Two independent reviewers extracted data from included studies by using data extraction form developed by the American Academy for cerebral palsy and Developmental Medicine (AACPDM).The methodological quality was assessed through Pedro scale and AACPDM method of quality assessment. Data synthesis: seven studies were subjected to descriptive analysis except two studies were included into Meta-analysis to measure the pulmonary functions (VC, FEV1). Conclusion: Respiratory therapy had insignificant effect on VC and FEV1. There was insignificant effect of respiratory therapy on pulmonary functions in children with muscular dystrophy.
Key words	1.	Systematic review.
	2.	respiratory therapy
	3.	pulmonary functions
	4.	randomized control trials
	5.	Children.
	6.	Muscular Dystrophy.
Arabic Title Page	:	فحص منهجي: تأثير العلاج التنفسي في الاطفال المصابين بضمور العضلات.
Library register number	:	3565-3566.

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PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mahmoud Nabawy Khattab.
Title	:	Effect of Suit Therapy on Bone Denisty in Spastic Diplegic Cerebral Palsied Children.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Gehan EL Meniawy.
	2.	Rokaya Abd Elshafy Soliman Elbanna.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of this study was to evaluate the effect of wearing the therapeutic suit during the application of a selected exercises program on bone denisty in children with spastic diplegic cerebral palsy. Thirty spastic diplegic children participated in this study. They were classified randomly into two groups of equal numbers, control and study groups. DEXA was used to evaluate bone denisty in the two groups before and after four successive weeks of application of the treatment programs. The control group received a selected exercises program. The study group received the same exercises program given to the control group while wearing the therapeutic suit. The pre-treatment results revealed non significant difference in all the measuring variables between the two groups. In comparing the pre and post-treatment results for the control and study groups revealed non significant improvement in all measured variables . Post treatment significant improvement was recorded in neck of femeur of study group but not in lumber spine.</p>		
Key words	1.	Cerebral palsy.
	2.	Diplegia.
	3.	bone density.
	4.	suit therapy.
Arabic Title Page	:	تأثير البدلة العلاجية علي كثافة العظام في الأطفال المصابين بالشلل المخي التصلبي المزودج.
Library register number	:	3435-3436.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
THERAPY DEPARTMENT FOR GROWTH AND DEVELOPMENT
DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mai Abd El Mohsen Ahmed Mahmoud.
Title	:	The problem solving strategy of poor core stability in children with cerebral palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Hassan Abd El Azeim.
	2.	Ehab Ragaa Abd El Raouf.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Background: Sitting is the earliest upright posture that is achieved during the normal development. The capacity to maintain balance in sitting is a pre-requisite to the activities of daily living. Core stability is the ability to control position and movement of central portion of the body. Children with cerebral palsy have poor central control which affects sitting balance. Although core stability is important for sitting balance, there are scarce studies that demonstrate core stability training in cerebral palsy. Purpose: to study the effect of core stability training program on sitting control in children with cerebral palsy and to design a problem solving strategy for poor core stability based on Neuro-Developmental Therapy (NDT) Subjects: 26 spastic diplegic children were divided into two groups; the group A; 12 children with a mean age (2.45±0.86) and group B; 14 children with a mean age (2.57±0.97). Group A received selected physical therapy program while Group B received an especially designed physical therapy program for core stability based on the NDT. Both groups received therapy for one hour, with a frequency of three times weekly for successive two months. Methods: the functional motor skills were evaluated using the Gross Motor Function Measure (GMFM) scale before and after the treatment. Results: The paired t-test revealed that the gross motor function of children from both groups improved significantly after two months of treatment in both lying and sitting domains (P=0.04 for lying and P=0.001 for sitting domain in group A while group B P= 0.0001 in lying and sitting domains). The unpaired t-test revealed that the children in group B performed better and showed significantly greater improvement than those in group A (P=0.004 in lying and 0.02 in sitting domain). Conclusion: The core stability is essential for postural sitting control. Neuro-developmental therapy is a valuable approach for improving functional sitting outcomes.</p>		
Key words	1.	problem solving strategy.
	2.	core stability.
	3.	cerebral palsy.
	4.	Children.
Arabic Title Page	:	استراتيجية حل مشكلة ضعف التحكم المركزي للجسم لدى اطفال الشلل الدماغي .
Library register number	:	3313-3314.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mohamed Emad El-Din Mohammed Ismaeel.
Title	:	Suspension therapy versus anklefoot orthosis on balance in children with spastic diaplegia.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Khaled Ahmed Olama.
	2.	Samah Attia Tolba Elshemy.
	3.	Mohammed Ashraf Abd Elwahed.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The purpose of this study was to evaluate the standing postural control in spastic diaplegic children following the participation in traditional therapeutic exercise program in spider cage versus participation in the same traditional therapeutic exercise program while wearing dynamic AFO. Thirty spastic diaplegic children, ranged in age from 6 to 8 years old participated in this study. They were classified randomly into two groups of equal number, (study group A and study group B). The study group A received selected program of physical therapy exercises in spider cage to facilitate gross motor skill standing balance performance. The study group B received the same program as study group A with wearing dynamic ankle foot orthosis. Balance parameters were assessed using Biodex stability system and pediatric balance scale in both groups before and after three months of the application of the treatment program. The results of this study revealed statistically significant improvement in all of the measuring variables of the study group A and study group B ($P<0.01$) when comparing pre and post treatment results, there was comparison between post treatment results of study group A and study group B ($P<0.01$) in favor of group (A). From the obtained results of this study, it can be concluded that, spider cage can be considered a beneficial modality that may be used to improve standing postural control in spastic diplegic children more than AFO.</p>
Key words	1.	Balance.
	2.	suspension therapy.
	3.	Diaplegia.
	4.	ankle foot orthosis.
	5.	Children.
Arabic Title Page	:	مقارنة تأثير جهاز الشبكة العنكبوتية بتأثير جبيرة تثبيت مفصل القدم المتحرك في زيادة الاتزان عند أطفال الشلل الدماغي المزدوج التقلصي.
Library register number	:	3213-3214.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mohamed Mostafa El-Sayed: Supervisors.
Title	:	Effects of Three Sides Support Ankle Foot Orthosis on Standing Balance in Spastic Diaplegic Cerebral Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Khaled Ahmed Olama.
	2.	Sahar Mohamed Nour El-Din.
	3.	Mohamed BedeerIbrahim.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The present study was conducted to investigate the effect of the three sides support ankle foot orthosis in addition to the physical therapy program on balance in diaplegic cerebral palsied children. This study was carried out on thirty spastic diaplegic children ,both sexes were involved (twenty boys and ten girls) divided into two equal groups,control group and study group, their ages were ranged from three to six years old, children were chosen from the out patient clinic, Faculty of Physical Therapy, Cairo University. All patients were assessed before and after the treatment program by using the Biodex stability system using dynamic balance test. The control group received the designed physical therapy program only based on neurodevelopmental approach, while the study group received the same designed physical therapy program in addition to training with the three side support ankle foot orthosis for 30 minutes every session day after day for six successive months. The collected data after the suggested period of treatment were statistically analyzed using t - test .The results of the study revealed that there was a statistically significant improvement in favor of the study group in all the measuring variables in all patient when comparing the post-treatment mean values of both the control and the study groups. According to the results of this study, it could be concluded that using of the three sides support ankle foot orthosis in addition to physical exercise program was highly recommended to be used in the rehabilitation of spastic diaplegic cerebral palsy children.</p>
Key words	1.	Ankle foot orthosis.
	2.	Balance.
	3.	Spastic diaplegic children.
	4.	Children.
Arabic Title Page	:	تأثير جبيرة الكاحل و القدم ثلاثيه الدعامات علي الإتزان أثناء الوقوف في حالات الشلل الدماغالتقلصالمذوج عند الأطفال .
Library register number	:	3211-3212.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mohamed samy mahmoud.
Title	:	Role of static suspension in postural kyphotic control of children with spastic diplegia
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Gehan Hassan El Meniawy.
	2.	Hassan Magdy El Barbary.
	3.	Samah Attia Tolba El Shiemy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The present study was conducted to investigate the role of the static suspension as a specially designed exercise program in addition to the physical therapy program in postural kyphotic control in diplegic cerebral palsied children. This study was carried out on thirty spastic diplegic children were chosen from the out patient clinic of Faculty of Physical Therapy, Cairo University; both sexes were involved (eighteen boys and twelve girls), divided into two equal groups, control group and study group, their ages were ranged from four to six years old. All patients were assessed before and after the treatment program by measuring Theta and Cobb's angles referring magnitude of thoracic curvature using the flexible ruler and X-ray films respectively. The control group received especially designed exercises for treatment of kyphosis outside static suspension unit plus the neuro developmental physical therapy treatment, while the study group received especially designed therapeutic exercises for treatment of kyphosis under modified traction forces inside static suspension unit plus the same neuro developmental physical therapy treatment given to control group for 60 minutes 3 days per week for three successive months. The results of the study revealed that there was a statistically significant improvement in all the measuring variables in all patients when comparing the post-treatment mean values of both the control and the study groups in favor of the study group. According to the results of this study, it could be concluded that postural correction exercises inside static suspension in addition to physical therapy exercise program might be recommended to be used in the rehabilitation of postural kyphosis in spastic diplegic cerebral palsied children.</p>		
Key words	1.	Static Suspension
	2.	Postural Kyphosis
	3.	Spastic Diplegic Children
	4.	Children.
Arabic Title Page	:	دور جهاز التعليق الثابت في التحكم في الحذب لدى الأطفال ذوي الشلل التشنجي المزدوج.
Library register number	:	3613-3614.

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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mohga M. Okasha.
Title	:	The Influence of Seat –to- Back Support Posterior Inclination on Oral Motor Functions in Normal Children versus Cerebral Palsy
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Abd El Azeem.
	2.	Ehab Ragaa Abd El Raouf.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Background: A common intervention for addressing postural control in children with cerebral palsy is adaptive seating, defined as modifications to seating devices to improve sitting posture and/or postural control in mobility-impaired individuals. Oral motor function is referred to a fine motor function of the jaw, tongue, lips, and cheeks for the purposes of eating, drinking, speaking, and other mouth activities. Children with CP often have decreased postural control that exacerbates their feeding/swallowing disorders. Purpose: to determine the Correlation between seat-to-back support posterior inclination angle and the oral motor function in children with CP, to determine the best angle of seat-to-back support posterior inclination for the oral motor function ability for children with CP and to compare between normal children and children with CP in the influence of different sea-to- back support posterior inclination on oral motor function. Subjects: 30 spastic diaplegic children with a mean age (3.483 ± 1.29) and 20 normal children with a mean age (2.46 ± 0.86). Each group is classified into four aged groups; (<1 - <2), (<2 - <3), (<3 - <4) & (<4 - <5). Methods: the surface electromyography (sEMG) Myosystem 1200 fixed cable with A computerized (<i>MRXP 1.06 clinical application</i>) system used to record and analyze the masseter muscle activation of both groups during sitting in adjustable backrest seat system in three different angles 0°, 15° & 30°. Results: Duncan's Multiple Range Test (dt) is revealed that age affecting the masseter muscle activity only in normal group. Student <i>t</i> test revealed that in normal children, there is significant difference between normal and spastic diaplegic children in response of change the angle of inclination on masseter muscle activation ($P > 0.05$). Paired <i>t</i> test is shown significant change in masseter muscle activation between angle 0° and inclination at 15° in normal children ($P > 0.05$) and non-significant difference between the three angles for spastic CP as ($P > 0.05$). Conclusion: the vertical 0° backrest is the most proper angle for the normal children. Spastic diaplegic children are in need for further seat adaptation to improve the oral muscle activation and the oral motor function.</p>		
Key words	1.	Seat-to-back support
	2.	Oral motor function
	3.	Normal children
	4.	Cerebral palsy
	5.	Posterior Inclination.
	6.	Children.
Arabic Title Page	:	تأثير الإختلاف في الميل الخلفي لظهر الكرسي على التحكم في وظائف الفم في الأطفال الأصحاء و مرضى الشلل الدماغي.
Library register number	:	3567-3568.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Nashwa Abd Elmanem Elnabrawy.
Title	:	Effect of hand arm bimanual intensive training technique on hand functions coordination in children with hemiparesis
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira M. El-tohamy.
	2.	Maher Khalil Abd Elsalam.
	3.	Assma Osama Elsaid.
Degree	:	Master.
Year	:	2013.
Abstract	:	<p>The purpose of this study: was to evaluate the effect of HABIT on the hand functions coordination in addition to the selected occupational and physical therapy program. Subject: Thirty children with hemiparesis, ranged in age from 4 to 7 years old participated in this study. They were classified randomly into two groups of equal number, (control and study). Procedure: The control group received selected therapeutic exercise, and occupational therapy program, while the study group received the previous program, in addition to hand arm bimanual intensive training technique. Hand functions were assessed using the Peabody developmental motor scale in both groups, and stop watch was used to detect the improvement of hand functions in study group, before and after 3 successive months of application of the treatment program. Results: Revealed statistically significant improvement in all of the measuring variables when comparing the results before and after treatment program in the two groups. Also significant difference was recorded when the results of the two groups were compared post treatment in favor of the study group. Conclusion: Hand arm bimanual intensive training technique is supported as an effective technique to improve hand function coordination among carefully selected group of children with hemiparesis.</p>
Key words	1.	hand arm bimanual intensive training.
	2.	hand function coordination.
	3.	Hemiparesis.
	4.	Children.
Arabic Title Page	:	تأثير العلاج المكثف للاستخدامات اليدين والذراعين معا علي وظائف اليد المتوافقة لدي الاطفال المصابين بالخذل الشقي.
Library register number	:	3445-3446.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Ramy Hamdy Abd El- Moniem Hegazy.
Title	:	Effect of Different Durations of Wearing Solid Ankle Foot Orthoses on Balance in Children with Spastic Diplegia.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Emam Hassan El-Negmy.
	2.	Amina Hendawy.
	3.	Rami Mahmoud Gharib.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Forty five spastic diplegic children with age ranging from 6 to 9 years from both gender participated in this study. Subjects were divided randomly into three groups (A, B and C) of equal number, fifteen patients each. All individuals in the three groups were assessed before starting the treatment protocol and after three successive months of treatment, utilizing the biodex stability system .Children in group (A) received treatment program with wearing solid ankle foot orthoses for 6 hours daily, children in group (B) received treatment program with wearing solid ankle foot orthoses for 12 hours daily. While group (C) received treatment program with wearing solid ankle foot orthoses for 23 hours daily. The treatment protocol was conducted for three successive months at frequency of three sessions per week (2 hours/session) for the three patients groups.it could be concluded that increased durations of wearing solid ankle foot orthoses has positive effect on balance of children with spastic diplegia.</p>		
Key words	1.	Cerebral palsy.
	2.	Diplegia.
	3.	Balance.
	4.	Ankle Foot Orthoses.
	5.	Children.
Arabic Title Page	:	تأثير الفترات الزمنية المختلفة الخاصة بارتداء جبيرة القدم الصلبة علي اتزان الأطفال المصابين بالشلل المخي التصليبي المزدوج
Library register number	:	3295-3296.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Rabab Ragab Ahmed Barkat.
Title	:	Role of Ankle Taping on Balance in Children with Hemiparetic Cerebral Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Gehan Hassan El-Meniawy.
	2.	Hassan Magdy El-Barbary.
	3.	Zeinab Ahmed Hussein.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>The purpose of this study was to determine the efficacy of ankle taping on balance in children with hemiparetic cerebral palsy. The study was conducted on thirty children with hemiparetic cerebral palsy; they were from the out-patient clinic of the Faculty of Physical Therapy, Cairo University. They were from both sexes (13 girls and 17 boys) and their ages ranged from 5 to 7 years. The children were classified randomly into two groups of equal numbers; control group (A) and study group (B). The two groups were evaluated by Biodex stability system to evaluate balance before and after three months of treatment. Group (A) received a selected exercise program, while group (B) received the same exercise program given to group (A) in addition to ankle kinesio taping. The results revealed significant improvement in all the measured variables of the two groups (A and B) when comparing their pre and post-treatment mean values (with and without taping for group (B)). Significant difference was also observed when comparing the post-treatment mean values of the two groups in favor of group (B). Significant difference was also observed when comparing the post-treatment mean values within group (B) in favor of results with taping. From the obtained results of this study, it could be concluded that using ankle taping in treatment of hemiparetic cerebral palsied children has significant effect in improving their balance, which recommended using the tape in conjunction with different treatment procedures for children with hemiparetic cerebral palsy.</p>		
Key words	1.	Cerebral Palsy.
	2.	Hemiparesis.
	3.	Balance.
	4.	Ankle Kinesio Taping.
	5.	Children.
Arabic Title Page	:	
Library register number	:	3427-3428.

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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Saly Said Abd- Elhady.
Title	:	Systematic Review: Effect Of Biofeedback On Gait In Children With Cerebral Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Hassan Abd El-Azim.
	2.	Hoda Abd El- Azim Mohamed El-Talawy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Objective: The aim of this systematic review was to study the effectiveness of biofeedback training on kinematic gait parameters in children with hemiplegic, diplegic and hemiparetic cerebral palsy. Methods: Systematic Review of randomized controlled trials, search made in Pub med, Pedro, Cochrane and Goggle scholar web site, all studies were from 2004. Selection criteria: Randomized controlled trials in which children with age between 5 and 13 years old received biofeedback training either visual and \ or auditory feedback. The intervention was biofeedback training in form of; pedometer augmented auditory feedback, gait trainer assisted walking exercise by using Biodex Gait Trainer 2, electromyography biofeedback training and balance training with visual feedback. Outcomes classified into primary; kinematic gait parameters in form of walking speed, stride length, cadence, step length, step length asymmetry, time of support, cycle duration and ambulation index and secondary; active range of motion of ankle, muscle tone of planter flexors, postural sway, time on the target, voluntary weight shifts and clinical gait assessment. Data extraction and management, three independent reviewers' extracted data from included studies in this systematic review using data extraction form developed by the American Academy for Cerebral Palsy and Developmental Medicine. The methodological quality of the included studies reviewed through Pedro scale, assessment of risk of bias and the American Academy for cerebral palsy and Developmental Medicine method of quality assessment. Results: Four studies were selected; two studies included in Meta-analysis for the primary outcome kinematic gait parameters in form of walking speed. The other outcomes were subjected to descriptive analysis. Biofeedback training had a significant effect on walking speed. Conclusion: There is weak evidence supporting the effect of biofeedback training on kinematic gait parameters in children with hemiplegic, diplegic and hemiparetic cerebral palsy.</p>		
Key words	1.	Systematic Review.
	2.	Biofeedback.
	3.	Gait and Cerebral palsy.
	4.	Children.
Arabic Title Page	:	فحص منهجي: تأثير التغذية المرتجة على المشي في الأطفال المصابين بالشلل الدماغي .
Library register number	:	3413-3414.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Sarah Wagih Ali Mohamed.
Title	:	Efficacy of laser acupuncture on community acquired pneumonia in pediatrics.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Hassan Abd El Azim.
	2.	Ahmed Fouad Amer.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Background: Community acquired pneumonia is the leading cause of child death worldwide, causing deaths of more than 2 million children in developing countries every year .Purpose:to determine the effects laser acupuncture in controlling the inflammation and increase in arterial oxygen saturation in children with community acquired pneumonia. Material and Methods: the protocol was authorized by ethical committee by Faculty of Physical therapy, Cairo University in 13/12/2011. Forty children with community acquired pneumonia their age ranged between 3 to 5 years were divided randomly into 2 equal groups, control group who received chest physiotherapy in addition to medical treatment. The study group received the same previous treatment in addition to laser acupuncture therapy at frequency 3 sessions per week for one month. Measurements of WBCs and SaO₂ were obtained for both groups before treatment and after one month at the end of the treatment program. Results:There was a statistical significant difference between mean values of all investigated parameters in study group and control group after treatment. The current study showed that there were statistical significant difference infavor of study group in terms of decrease of WBCs, increase of arterial oxygen saturation. Conclusion: Laser acupuncture therapy has effect in management of children with community acquired pneumonia.</p>		
Key words	1.	Chest Physiotherapy.
	2.	Laser Acupuncture.
	3.	Community Acquired Pneumonia.
	4.	Children.
Arabic Title Page	:	كفاءة استخدام الليزر على نقاط الوخز بالإبر الصينية في حالات الالتهاب الرئوي المكتسب من المجتمع .
Library register number	:	3177-3178.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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DISORDER IN CHILDREN AND ITS SURGERY
PREPARED BY ADEL ABD EL SALAM
NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Walaa Abd El – Hakiem Abd El – Nabi.
Title	:	Quantification of energy expenditure during walking with different body weight support in children with hemiplegia.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira Mohamed El – Tohamy.
	2.	Khaled Eid Sobhy.
Degree	:	Master.
Year	:	2013.
Abstract	:	
<p>Background: quantification of energy expenditure during walking can provide objective data in order to help evaluation of children with hemiplegia and to assess the effectiveness of therapeutic intervention. The purpose: this study was conducted to quantify the energy expenditure during walking in hemiplegic children compared to normal children and to assess energy expenditure in hemiplegic children during walking with different body weight support. Subjects: Fifty normal children and fifty hemiplegic children of the same age group from 7 to 10 years old participated in this study; this study was conducted in the laboratory of Biodex unweighting system of Faculty of Physical Therapy, Cairo University. Energy expenditure was measured by using energy expenditure index method; it was measured for normal children during treadmill walking without body weight support while in hemiplegic children it was measured during treadmill walking with different body weight support (0%, 15%, and 30%). Results: There was a statistically significant difference in energy expenditure during walking without body weight support between hemiplegic and normal children and there was a statistically significant difference in energy expenditure at 0%, 15%, and 30% of body weight support in hemiplegic children. The EEI at 30% of body weight support were statistically significant different from those at 0% and 15% of body weight support. Conclusion: The results of this study showed that hemiplegic children expend more energy during walking, while treadmill walking with 30% body weight support decreases the energy expenditure and makes it close to normal value.</p>		
Key words	1.	Hemiplegia.
	2.	Energy Expenditure.
	3.	Body Weight Support.
	4.	Children.
Arabic Title Page	:	قياس كمية الطاقة المستنفذة اثناء المشى مع اختلاف دعم وزن الجسم عند الاطفال المصابين بالفالج الشقي .
Library register number	:	3367-3368.